

[0100] In a second method, a new message is used. The MCE sends the new message, e.g. a suspend indication message to the eNB. The new message include an identifier of a MBMS service of which the data transmission is to be suspended, and may further include time information for indicating a modification period from which the data transmission is suspended.

[0101] After receiving the message sent at 601, the eNB may send a response message to the MCE for acknowledge the receipt of the message sent at 601.

[0102] At 602, the eNB sends a suspend notification message via an air interface. The suspend message includes information for indicating the identifier of MBMS service and may include the time information for indicating the modification period from which the data transmission is suspended. Or, the time information may indicate other time mode, e.g. indicate a SFN from which the data transmission is suspended, or indicate a certain time period after which the data transmission is suspended, the certain time period may be several milliseconds or several SFNs. Or the suspend notification message may not include the time information but include the identifier of the MBMS service. After receiving the suspend notification message by the UE, if the UE needs to receive the service, processing at 603 is performed.

[0103] At 603, the UE needing to receive the service data initiates a procedure of establishing a point-to-point carrier which is the same as the conventional procedure of establishing the point-to-point carrier and is not described herein.

[0104] At 604, the eNB waits for a period of time which is determined according to the time indicated by the message sent at 601. When the indicated time arrives, the eNB starts to suspend the data transmission of the MBMS service, does not send the control information of suspend MBMS service via the air interface, and starts to send new control information, that is, the processing at 605 is performed. The new control information does not include the information of the service the data transmission of which is to be suspended.

[0105] Afterwards, the MCE may initiate a procedure for obtaining the UE counting result again. When UE data can be sent via the MBMS carrier, the UE receives the control information of the MBMS. The control information includes the identifier of the MBMS service. Here, the UE initiates a release of the point-to-point carrier and starts to receive the GCSE service via the MBMS carrier.

[0106] Thus, the processing at the fourth embodiment is finished.

[0107] FIG. 5 is a flowchart illustrating a method for obtaining a UE counting result by a UE. In the above embodiments, protocols are changed to obtain the UE counting result. According to the present invention, the UE may be changed rather than modification the air interface protocols, and the UE in the idle mode sends the UE counting response. As shown in FIG. 7, the UE includes an application layer module 701, a two-layer protocol module 704, a receiving module 702 and a sending module (transmitting module) 703.

[0108] The receiving module 702 is to receive a message from an air interface and send the message to the two-layer protocol module 704.

[0109] The two-layer protocol module 704 relates to RRC, PDCP, RLC and MAC protocols. The two-layer protocol module 704 is to parse the message received from the air interface. If the message is a UE counting message of a

MBMS service, the two-layer protocol module 704 is to send a message to the application layer module 701. The application layer module 701 determines that a service carried by the MBMS is a GCSE service, and sends a message to the two-layer protocol module 704 to indicate that a RRC connection needs to be established to response the UE counting message. The two-layer protocol module 704 generates messages of the air interface, the messages includes messages for establishing the RRC and a UE counting response message. The two-layer protocol module 704 sends the messages to an eNB via the sending module 703.

[0110] Or, the application layer module 701 determines that the GCSE service is transmitted via the MBMS carrier, and sends a message to the two-layer protocol module 704 to instruct the two-layer protocol module 704 that a RRC connection needs to be established when the UE counting message is received so as to response the UE counting message. For example, the application layer module 701 sends the two-layer protocol module 704 a message including an instruction of that the UE needs to response the MBMS UE counting and including an MBMS carrier identifier TMGI. The UE stores the information. After receiving the message from the air interface, the receiving module 702 sends the message to the two-layer protocol module 704. The two-layer protocol module 704 relates to the RRC, PDCP, RLC and MAC protocols. If the UE is in the RRC connected mode, a RRC layer of the UE sends a UE counting response according to the current protocol. If the UE is in the RRC idle mode, the two-layer protocol module 704 parses the message received from the air interface. If the message is the UE counting message of the MBMS service, according to the above stored information, if it is determined that the MBMS needs the corresponding MBMS service, the two-layer protocol module 704 initiates a procedure of establishing a RRC connection, generates messages of the air interface including messages for establishing the RRC. After the RRC connection is established, the two-layer protocol module 704 generates a UE counting response message, and sends the messages to the eNB via the sending module 703.

[0111] Thus, the processing at the fifth embodiment is finished.

[0112] It should be understand that the above are only preferred embodiments of the present invention and are not for use in limiting the protection scope of the present invention. Any modification, equivalent replacement and improvement made within the scope of the present invention should be covered under the protection scope of the present invention.

1. A method for obtaining a UE counting result, comprising:

if a User Equipment (UE) receives a UE counting request message and a service corresponding to a service identifier comprised in the UE counting request message is a Group Call System Enabler (GCSE) service transmitted via a Multimedia Broadcast and Multicast Service (MBMS) carrier,

establishing, by the UE, a Radio Resource Control (RRC) connection;

sending a UE counting response via the RRC connection or sending, by the UE, a RRC establishing message; and